THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

Paper No. 56

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte LUDWIG SCHUSTER, HANNS-HELGE STECHL
and DIETRICH WOLFF

_____

Appeal No. 1997-4202
Application No. 08/603,197

_____

ON BRIEF

_____

Before PAK, WALTZ, and LIEBERMAN, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 1 through 5 which are all the claims remaining in the application.

THE INVENTION

The invention is directed to a process for degrading aromatic nitro compounds by reaction with a sufficient amount of ozone to virtually completely destroy the aromatic nitro compounds. Two specific embodiments appear in the claims set forth ***infra***. In the first embodiment the aromatic nitro compounds are virtually completely destroyed down to inorganic components. In the second embodiment the aromatic nitro compounds are virtually completely destroyed while the reaction with ozone is initiated at a pH of 12.

THE CLAIMS

Claims 1 and 3 are illustrative of appellants' invention and are reproduced below.

1. A process for degrading aromatic nitro compounds in wastewaters from nitrobenzene production plants which consists essentially of treating said wastewaters containing aromatic nitro compounds with ozone, in an amount sufficient to virtually completely destroy said aromatic nitro compounds down to inorganic components, at 20 to 100°C, 1.5 to 10 bar and pH 7 to 9.

3. A process for degrading aromatic nitro compounds in wastewaters from nitrobenzene production plants by reaction with ozone, in an amount sufficient to virtually completely destroy said aromatic nitro compounds, wherein the degradation reaction, at a temperature of from 20 to 100°C and a pressure of from 1.5 to 10 bar absolute, is started at pH 12 and the pH level is maintained above pH 4.5 until the reaction is completed.

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references.

V. Caprio et al., Chemical Abstract 102:172028f (Chemical Abstract 102:172028f) "Ozonation of aqueous solutions of nitrobenzene," Vol. 102 Number 20, p. 341, (May 20, 1985).

M. A. Shevchenko et al., (Shevchenko), "The Use of Oxidizing Agents to Detoxify Nitro-Derivatives of Phenols in Water ," Khimiya I Tekhnologiya Vody, 8, No. 6, pages 1-7 (translation), 1986.

THE REJECTIONS

Claims 1 through 5 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chemical Abstracts 102:172028f or Shevchenko.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with the appellants that the aforementioned rejections under 35 U.S.C. § 103 are not well founded. Accordingly, we do not sustain these rejections.

As an initial matter appellants state that the claims do not all stand or fall together. Appellants argue for the separate patentability of claims 1 through 2 as a first group, and claims 3 through 5 as a second group. See Brief, page 2. Accordingly, we select claims 1 and 3, the sole independent claims as representative of the claimed subject matter and limit our consideration thereto. 37 C.F.R. § 1.92 (c)(7)(1995).

The Rejections under 35 U.S.C. § 103

Initially, we consider the rejection of claim 1 through 5 over Chemical Abstracts 102:172028f. We reverse this rejection. "[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a ***prima facie*** case of unpatentability," whether on the grounds of anticipation or obviousness. See ***In re Oetiker***, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On the record before us, the examiner relies upon an abstract to reject the claimed subject matter and establish a ***prima facie*** case of obviousness.

We find that Chemical Abstracts 102:172028f discloses wastewater treatment by ozonization to completely remove nitrobenzene with no appreciable accumulation of unsaturated intermediate products. The initial products are nitric acid, and maleic acid or anhydride. The organic components may be subsequently oxidized to oxalic acid and carbon dioxide. In our view, the disclosure of Chemical Abstracts 102:172028f is sufficient to teach the virtual destruction of the aromatic nitro compounds as required by claims by the claimed subject matter, but not "down to inorganic components."

The basic premise of the rejection is that Chemical Abstracts 102:172028f teaches a process for degrading aromatic nitro compounds substantially as claimed. See Answer, page 5. The examiner submits that the temperature range includes room temperature, the pH range includes a neutral pH and an increase in pressure increases the rate of oxidation. See Answer, pages 5 and 7. Moreover, the examiner takes Official Notice that, "[i]t is well known in the art of water treatment that an increase in temperature or pressure during the oxidation of organic contaminants in

wastewater would increase the rate of oxidation." See Answer, page 7. Appellants have neither traversed the examiner's assertion nor challenged the correctness of such assertion. Accordingly, we accept the examiner's statement as a fact.

Notwithstanding these findings, the Chemical Abstracts 102:172028f reference however, does not disclose a pH of 7 to 9 as required by claim 1 or a starting pH of 12 as required by claim 3. The examiner instead relies on the disclosure of Vakulenko[1] which suggests the use of neutral or basic media for the decomposition of nitrophenol by ozone, since the process slows in acid media. See Answer, page 9. However, the Vakulenko reference is not included in the examiner's rejection. It is well settled that, "[w]here a reference is relied on to support a rejection, whether or not in a 'minor capacity,' there would appear to be no excuse for not positively including the reference in the statement of rejection." ***In re Hoch*** , 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407, n.3 (CCPA 1970). Furthermore, it is unclear whether the omission from the rejection is inadvertent, or constitutes a new ground of rejection by the examiner. In either event, the examiner has not complied with the requirements of MPEP §1208(A)(9)(10), 7th ed., Revision 1, Feb. 2000. Moreover, the requirement of claim 1 that the amount of ozone is sufficient to virtually completely destroy said aromatic nitro compounds "down to inorganic components" is not adequately addressed by either the examiner or appellants. The examiner has not explained why the use of additional ozone in the process of Chemical Abstracts 102:172028f would result in complete destruction of the nitro

[1] V. F. Vakulenko et al., (Vakulenko), "Intensification of the Process of Ozonation of Nitro Derivatives of Phenol in Aqueous Solutions," Khimiya I Tekhnologiya Vody, 9, No. 5, pages 414-6 (translation), 1987.

compounds down to inorganic components, based on the Chemical Abstracts 102:172028f disclosure that the ultimate products are carbon dioxide and oxalic acid.

As to the subject matter of claim 3 there is additionally no suggestion or teaching for a starting pH of 12 or of maintaining the pH above 4.5 until the reaction is completed.

Finally, with respect to the first rejection, the examiner has relied upon a single abstract in rejecting each of the claims without citing (or apparently obtaining copies of) the underlying scientific article itself. Citation of an abstract without citation and reliance on the underlying scientific article itself is unacceptable. Abstracts may not be written by the author of the underlying article and often are erroneous. Hence, the preferred practice would be for the examiner to cite and rely on the underlying article. Further, when the examiner cites and relies on an abstract, it would appear prudent for the applicants to obtain a copy of the underlying article and submit a copy to the examiner when responding to the rejection. Neither action has thus far been taken. Moreover, it is likely that the underlying article would provide at least some of the process parameters such as pH, temperature or pressure.

Based upon the above considerations, the examiner has not established a ***prima facie*** case of obviousness and the examiner's rejection of claims 1 through 5 as unpatentable over Chemical Abstracts 102:172028f is not sustained. In view of the above analysis, we have determined that the examiner's legal conclusion of obviousness is not supported by the facts. "Where the legal conclusion [of

obviousness] is not supported by the facts it cannot stand." ***In re Warner***, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

We turn next to the rejection of claims 1 through 5 over Shevchenko.[2] We find that Shevchenko discloses the use of oxidizing agents to detoxify nitro derivatives of phenol in water. Low doses of ozone are capable of providing a deep breakdown of nitrophenols within 10 minutes. See page 4. Shevchenko discloses that the concentration of certain materials (i.e., pesticides containing nitrophenols) is reduced by 100% or 87% respectively. See page 5. The table on page 6 indicates a starting pH of 10.9 to 11.0 followed by ozonization. However, neither a starting pH of 12 nor a pH of 7 to 9 is taught as required by the claimed subject matter of claims 3 and 1 respectively. As with the above rejection the examiner again relies on the disclosure of Vakulenko to disclose the requisite neutral to basic pH range for the ozonation reaction and the Official Notice discussed ***supra***.

As to the virtual destruction of the aromatic nitro compounds, Table 3 of Shevchenko contain process steps of settling, filtration, ozonation, and sorption on an activated carbon. These steps are not excluded by claim 3 and may not be excluded from claim 1. However, neither the examiner nor appellants have adequately addressed the limitations of either claims 1 or 3 directed to the virtually complete destruction of said aromatic nitro compounds and that of claim 1 additionally requiring that the destruction be "down to inorganic components" in view of the additional steps of coagulation, settling, and sorption on activated carbons.

[2] We refer to the English language translation of Shevchenko relied upon in the record before us.

Based upon the above considerations, the examiner has not established a ***prima facie*** case of obviousness and the examiner's rejection of claims 1 through 5 as unpatentable over Shevchenko is not sustained. In view of the above analysis, we have determined that the examiner's legal conclusion of obviousness is not supported by the facts. "Where the legal conclusion [of obviousness] is not supported by the facts it cannot stand." ***In re Warner***, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

In summary, on this record, we reverse each of the rejections under 35 U.S.C. § 103.

Remand to the Examiner

Accordingly, on consideration of the record, we remand the application to the jurisdiction of the examiner for appropriate action in accordance with our decision ***supra***. Upon return of this application to the examiner, the examiner and applicants should reconsider the patentability of the claimed subject matter over the Chemical Abstracts 102:172028f underlying reference, if readily available, and any possible combination of references including Vakulenko. In considering the patentability of the claimed subject matter the examiner must fully address the limitation directed to the virtual complete destruction of the aromatic nitro compound "down to inorganic omponents."

With respect to each rejection, if any are to be entered, the examiner shall state the ground of rejection and point out where each of the specific limitations recited in the rejected claims is found in the prior art relied upon in the rejection, shall

identify any difference between the rejected claims and the prior art relied upon and shall explain how the claimed subject matter is rendered unpatentable over the prior art. If the rejection is based upon a combination of references, the examiner shall explain the rationale for making the combination.

DECISION

The rejection of claims 1 through 5 under 35 U.S.C. § 103 as being unpatentable over Chemical Abstracts 102: 172028f or Shevchenko is reversed.

REVERSED AND REMANDED

CHUNG K. PAK)
Administrative Patent Judge)
)
)
THOMAS A. WALTZ) APPEALS
Administrative Patent Judge) AND
) INTERFERENCES
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Application No. 08/603,197

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DECISION: REVERSED AND REMANDED
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
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OB/HD GAU

PALM / ACTS 2 / BOOK
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